WHAT IS CLAIMED IS:

1. A method of determining blood oxygen saturation comprising:

sensing physiological signals resulting from the attenuation of light of at least first and second wavelengths by body tissue carrying pulsing blood;

determining at least two values corresponding to oxygen saturation based upon at least two alternative methods of using the physiological signals; and

determining a resulting value for oxygen saturation from the at least two values corresponding to oxygen saturation.

2. The method of Claim 1, wherein the step of determining a resulting value comprises selecting from the at least two values at least one value that is a maximum among the at least two values.

3. The method of Claim 1, wherein the step of determining a resulting value comprises averaging at least some of the at least two values.

4. The method of Claim 1, wherein one of the alternative methods comprises at least one calculation in the frequency domain.

5. The method of Claim 4, wherein the calculation in the frequency domain comprises performing a Fourier Transform on the physiological signals.

6. The method of Claim 1, wherein at least one of the at least two alternative methods comprises a calculation based on a ratio of a normalized representation of the physiological signal resulting from the first wavelength to a normalized representation of the physiological signal resulting from the second wavelength.

7. The method of Claim 6, wherein at least one of the at least two alternative methods comprises a calculation based on the physiological signals after they have been effected by a recursive polyphase bandpass filter.

8. The method of Claim 6, wherein at least one of the at least two alternative methods comprises a calculation based on the physiological signals after they have been effected by an adaptive implementation of a recursive polyphase bandpass filter.

9. The method of Claim 6, wherein at least one of the at least two alternative methods comprises a calculation based on the physiological signals after they have been effected by a bank of filters.

10. The method of Claim 6, wherein at least one of the at least two alternative methods comprises a calculation based on the physiological signals after they have been effected by a sum of squares analysis.

11. The method of Claim 6, wherein at least one of the at least two alternative methods comprises a calculation based on a scan of possible saturation values.

12. The method of Claim 11, wherein the calculation based on a scan of possible saturation values comprises a discrete saturation transform.

13. The method of Claim 6, wherein at least one of the at least two alternative methods comprises a calculation based on determining values for saturation that minimize the correlation between a signal portion and a noise portion of at least one of the physiological signals.

14. The method of Claim 6, wherein at least one of the at least two alternative methods comprises a calculation based on the physiological signals after they have been effected by a Kalman filter.

15. The method of Claim 6, wherein at least one of the at least two alternative methods comprises a calculation based on the physiological signals after they have been effected by a neural network.

16. The method of Claim 6, wherein at least one of the at least two alternative methods comprises a calculation based on the physiological signals after they have been effected with spectral estimation techniques.

17. The method of Claim 6, wherein at least one of the at least two alternative methods comprises selecting at least one of the at least two values based on characteristics of the physiological signals indicative of the quality of the physiological signals.

18. The method of Claim 6, wherein step of determining comprises averaging the resulting value over time, said averaging dependent upon characteristics of the physiological signals indicative of the quality of the physiological signal.

19. The method of Claim 18, wherein the averaging is based on confidence in the quality of the physiological signals.

20. The method of Claim 19, wherein the confidence is determined by analyzing whether there is significant motion noise present in the physiological signals.

21. The method of Claim 6, wherein at least one of the at least two alternative methods comprises a calculation based on the physiological signals after they have been effected by an adaptive algorithm.

22. The method of Claim 21, wherein at least one of the at least two alternative methods comprises a calculation based upon a scan of values potentially indicative of said physiological parameter.

23. A method of determining pulse rate comprising:

sensing physiological signals resulting from the attenuation of light of at least first and second wavelengths by body tissue carrying pulsing blood;

determining at least two values corresponding to pulse rate based upon at least two alternative methods of processing the physiological signals; and

determining a resulting value for pulse rate from the at least two values corresponding to pulse rate.

24. The method of Claim 23, wherein the step of determining comprises selecting at least one of the at least two values based on a determination of confidence in the accuracy of physiological signals.

25. The method of Claim 23, wherein determining a resulting value comprises averaging the at least two values.

26. The method of Claim 25, wherein said step of averaging comprises averaging over a time window, wherein said window is increased for potential of said physiological parameter having a lower confidence of accuracy and decreased for potential values of said physiological parameter having a higher confidence of accuracy.

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